



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,375	05/19/2005	Frank-Olaf Mahling	LU 6066 (US)	1622
24114	7590	06/04/2009	EXAMINER	
LyondellBasell Industries 3801 WEST CHESTER PIKE NEWTOWN SQUARE, PA 19073				NGUYEN, NGOC YEN M
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
06/04/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/535,375	MAHLING ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ngoc-Yen M. Nguyen	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 26 February 2009.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) 13-18 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-12, 19-21 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobst et al (4,372,758) in view of either Sobukawa et al (6,492,298)).

Bobst '758 discloses a process for removing unpolymerized gaseous monomers from a solid olefin polymer containing said gaseous monomers which comprises: conveying said polymer to a purge vessel in a first gas stream, said gas being inert to said polymer and monomers and containing substantially no oxygen; feeding a purge gas to said purge vessel, said purge gas being inert to said resin and said monomers and containing substantially no oxygen; countercurrently contacting said polymer and said purge gas in said purge vessel to produce a second gas stream containing said purge gas, said conveying gas and said gaseous monomers and a polymer stream having a reduced amount of said gaseous monomers; and recycling a portion of said second gas stream to said purge vessel (note claim 1).

The monomers to be removed can be ethylene, one or more of the hydrocarbon comonomers, saturated hydrocarbons and non-reactive hydrocarbon olefins (note

column 3, lines 38-45). It would have been obvious to one skilled in the art to use the process of Bobst '758 to remove any gaseous monomers from any polymer (in solid or other forms) as long as the gaseous monomers contained in the polymer can be diffused out into and being removed by the gas purge stream.

The purge gas is preferred to be nitrogen (note claim 5).

After removing the second gas stream from the purge vessel, a portion of second gas stream is vented to a flare and the remaining is recycled back as the first gas stream (note Figure 1) or as the purge gas (note Figure 2).

The difference is Bobst '758 does not disclose the step of treating the second gas stream before recycling it to the purge vessel.

Sobukawa '298 discloses an ordinary-temperature purifying catalyst comprising an oxide having an oxygen defect introduced by a reduction treatment and a noble metal loaded on the oxide (note claim 1). The catalyst can decompose and remove ethylene in an ordinary temperature range (note column 4, lines 57-58) by contacting the catalyst with air (as an oxygen-containing gas) containing the ethylene (note claim 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove ethylene in the second gas stream in the process of Bobst '758 by using an ordinary temperature purifying catalyst as suggested by Sobukawa '298 because using such catalyst would save energy (as compared when a "flare" is used) and more of the inert gas in the second gas stream can be recycled (no inert gas is lost in the "flare") thereby saving the cost of fresh inert gas.

Since air is required when using the ordinary temperature purifying catalyst to remove the ethylene, the resulting purified gas may contain some residual oxygen. However, Bobst '758 clearly teaches that the presence of oxygen in the purging vessel creates safety problems in view of the explosive nature of the hydrocarbon monomers at higher concentrations (note column 6, lines 1-4). Thus, it would have been obvious to one of ordinary skill in the art to minimize the amount of oxygen in the purified gas so that when it being recycled back to the purging vessel, it would not cause any safety problem.

Applicant's arguments filed February 26, 2009 have been fully considered but they are not persuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants argue that a person of ordinary skill in the art would find no reason to use the catalyst of Sobukawa in the process of Bobst, which relates to a process for

removing unpolymerized gaseous monomers from solid olefin polymers in a purge vessel.

Granted that Bobst '758 is related to a process for removing unpolymerized gaseous monomers from solid olefin polymers as argued by Applicants', however, after the monomers (including ethylene) are removed by using an inert gas stream (20), Bobst '758 teaches the step of removing at least some of the monomers from the resulting gas stream (12) in order to recycle the remaining inert-containing gas stream (18) back to the purge vessel. In Bobst '758, the monomers are removed by burning, i.e. feeding a portion of stream (12) to a flare. It would have been obvious to one skilled in the art to use the process as suggested by Sobukawa '298 to remove ethylene, i.e. a monomer, at room temperature to save energy cost.

Applicants argue that Bobst '758 and Sobukawa '298 do not disclose the step of adding oxygen to the gas stream which has been discharged from the container.

Sobukawa '298, as stated in the above rejection, discloses a process comprising the step of contacting the catalyst with air including ethylene (note claim 20). The disclosure of "air" fairly teaches that oxygen is required for the process (note also column 25, lines 42-53). Thus, it would have been obvious to one skilled in the art to add the necessary oxygen to gas stream to be treated with the catalyst in order to effectively remove the undesired component, such as ethylene, from the gas stream.

Applicants argue that the feature of claim 1 that at least part of the gas stream introduced into the container is formed by the oxidized gas stream is not mentioned in either Bobst '758 or Sobukawa '298.

As stated above, for the combined teaching of Bobst '758 and Sobukawa '298, ethylene or other monomers from gas stream (12) in Bobst '758 would be removed by the "oxidation" process of Sobukawa '298, and at least a portion of the resulting "oxidized" gas would be returned to the purge vessel (10) in Bobst '758 through line (18) or line (33).

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner can normally be reached on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ngoc-Yen M. Nguyen/  
Primary Examiner, Art Unit 1793

nmm  
June 3, 2009